



Review report of a final thesis

Student: Jan Horák
Reviewer: MSc. Juan Pablo Maldonado Lopez, Ph.D.
Thesis title: Lip Reading using Deep Neural Networks
Branch of the study: Knowledge Engineering

Date: 18. 5. 2018

<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 5.</i>
1. Difficulty and other comments on the assignment	1 = extremely challenging assignment, 2 = rather difficult assignment, 3 = <u>assignment of average difficulty</u>, 4 = easier, but still sufficient assignment, 5 = insufficient assignment
<i>Criteria description:</i> Characterize this final thesis in detail and its relationships to previous or current projects. Comment what is difficult about this thesis (in case of a more difficult thesis, you may overlook some shortcomings that you would not in case of an easy assignment, and on the contrary, with an easy assignment those shortcomings should be evaluated more strictly.)	
<i>Comments:</i> The assignment is suitable for the bachelor level.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 4.</i>
2. Fulfilment of the assignment	1 = <u>assignment fulfilled</u>, 2 = assignment fulfilled with minor objections, 3 = assignment fulfilled with major objections, 4 = assignment not fulfilled
<i>Criteria description:</i> Assess whether the thesis meets the assignment statement. In Comments indicate parts of the assignment that have not been fulfilled, completely or partially, or extensions of the thesis beyond the original assignment. If the assignment was not completely fulfilled, try to assess the importance, impact, and possibly also the reason of the insufficiencies.	
<i>Comments:</i> The assignment criteria are fulfilled.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 4.</i>
3. Size of the main written part	1 = <u>meets the criteria</u>, 2 = meets the criteria with minor objections, 3 = meets the criteria with major objections, 4 = does not meet the criteria
<i>Criteria description:</i> Evaluate the adequacy of the extent of the final thesis, considering its content and the size of the written part, i.e. that all parts of the thesis are rich on information and the text does not contain unnecessary parts.	
<i>Comments:</i> The text is readable and informative, without being redundant.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
4. Factual and logical level of the thesis	100 (A)
<i>Criteria description:</i> Assess whether the thesis is correct as to the facts or if there are factual errors and inaccuracies. Evaluate further the logical structure of the thesis, links among the chapters, and the comprehensibility of the text for a reader.	
<i>Comments:</i> I did not find any factual error nor inaccuracies.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
5. Formal level of the thesis	100 (A)
<i>Criteria description:</i> Assess the correctness of formalisms used in the thesis, the typographical and linguistic aspects, see Dean's Directive No. 26/2017, Article 3.	
<i>Comments:</i> The language used in the thesis is appropriate.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
6. Bibliography	100 (A)

Criteria description:
Evaluate the student's activity in acquisition and use of studying materials in his thesis. Characterize the choice of the sources. Discuss whether the student used all relevant sources, or whether he tried to solve problems that were already solved. Verify that all elements taken from other sources are properly differentiated from his own results and contributions. Comment if there was a possible violation of the citation ethics and if the bibliographical references are complete and in compliance with citation standards.

Comments:

The bibliography includes a mixture of books, published scientific papers and technical blogs/online sources.

Evaluation criterion:

The evaluation scale: 0 to 100 points (grade A to F).

7. Evaluation of results, publication outputs and awards

90 (A)

Criteria description:

Comment on the achieved level of major results of the thesis and indicate whether the main results of the thesis extend published state-of-the-art results and/or bring completely new findings. Assess the quality and functionality of hardware or software solutions. Alternatively, evaluate whether the software or source code that was not created by the student himself was used in accordance with the license terms and copyright. Comment on possible publication output or awards related to the thesis.

Comments:

The results do not seem to extend the state of the art at the moment. Jan is familiar now with state-of-the-art deep learning techniques, and I believe he will find further enhancements to this technology later on.

Evaluation criterion:

No evaluation scale.

8. Applicability of the results

Criteria description:

Indicate the potential of using the results of the thesis in practice.

Comments:

The applicability of the results is limited at the moment, as per the demo shown, but the technology is sound. I believe that with more computer power the model can be enhanced and the results can be substantially improved.

Evaluation criterion:

No evaluation scale.

9. Questions for the defence

Criteria description:

Formulate any question(s) that the student should answer to the committee during the defence (use a bullet list).

Questions:

- Is it possible to train video on phonemes instead of full words, to make the model transferable to other languages (for example, languages on the same family)?
- If we used a data set consisting of video and sign language (think, for instance, news on the TV), will it be possible to train a similar model on sign language, and from there, to text?

Evaluation criterion:

The evaluation scale: 0 to 100 points (grade A to F).

10. The overall evaluation

90 (A)

Criteria description:

Summarize the parts of the thesis that had major impact on your evaluation. The overall evaluation **does not** have to be the arithmetic mean or any other formula with the values from the previous evaluation criteria 1 to 9.

Comments:

The assignment demanded a familiarity with a wide array of techniques and familiarity with state-of-the-art deep learning techniques, which I believe have been mastered successfully by Jan.

Signature of the reviewer: